DOCUMENT RESUME

ED 342 950 CE 060 531

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TITLE	In Transition...Opening Your Classroom to the Adult Student.
INSTITUTION	New York State Occupational Equity Center, Latham.
SPONS AGENCY	New York State Education Dept., Albany.
PUB DATE	90
NOTE	44p.
AVAILABLE FROM	New York State Occupational Education Equity Center, 47 Cornell Road, Latham, NY 12110 ($5.00).
PUB TYPE	Guides - Classroom Use - Teaching Guides (For Teacher) (052)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Adult Education; *Adult Students; Age Discrimination; Ancillary School Services; Classroom Communication; Classroom Environment; Cognitive Style; Cooperative Learning; Educational Environment; High Schools; Learning Disabilities; Mathematics Skills; Needs Assessment; Nontraditional Students; Positive Reinforcement; *Public School Adult Education; Reentry Students; Remedial Instruction; *Secondary School Teachers; Stereotypes; Student Characteristics; Teacher Attitudes; Teacher Behavior; Teacher Expectations of Students; *Teaching Methods

ABSTRACT

This manual is intended specifically for new teachers who will be working with reentry or "hard-to-serve" adults. Introductory materials include general information for high school teachers who will incorporate this new, diverse population into the secondary classroom, descriptions of who these new adult students will be, and a discussion of needed support services. An institutional needs assessment guide is provided to evaluate institutional readiness. Other sections focus on the following topics: differences between teen and adult students; considerations for effective teaching methods; perceptual learning styles; methods of presentation; cooperative learning; listening skills; good questioning; mathematics skills and the adult learner; the mathematics learning environment; teacher expectations and stereotypes; remediation; learning disabilities; encouragement of students with poor skills; effective praise; interpersonal dynamics in the classroom; and creation of a constructive environment. An exercise follows to guide the teacher from theory to practice. Also provided are stories of two reentry students who are having difficulties with their role as students, stories that encourage the teacher to consider the issues raised in the manual. Comments are offered for comparison with teachers' thoughts. Appendixes include the following lists: 10 general resources, 37 resources on adult learners, 8 resources on adult career counseling, and 4 organizational sources. (YLB)

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In Transition...

Opening Your Classroom to the Adult Student

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1990

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Single Parents

Displaced Homemakers

High School Dropouts

Dislocated Workers

Unskilled Workers

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High School Dropouts

Dislocated Workers

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In Transition...Opening Your Classroom to the Adult Student is a publication of the **New York State Occupational Education Equity Center**, which is directed by Dr. Craig P. Flood, Ed.D. It is federally funded under Vocational Education Act grant # 152-90-3506 through the New York State Education Department, Project Coordinator, Mary Ann Etu, Vocational Sex Equity Coordinator.

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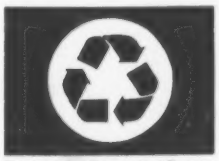

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In Transition...

Opening Your Classroom to the Adult Student

Developed by the

New York State

Occupational Education Equity Center

1990

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DEDICATION

This manual was written specifically for teachers who will be working with re-entry adults. As a former middle school and high school teacher, who was suddenly thrust into the adult education arena, I know firsthand the anxiety you may be feeling about the sudden changes in your classroom.

But I also know the many rewards of teaching re-entry adults. I cannot begin to express how thrilling it is to share the joy of a 40-year-old earning a GED. It is equally rewarding to help a welfare mother attain the education and job skills necessary to support her family and become a role model for her children.

I hope that this manual offers you insight, encouragement, and useful suggestions as you adapt your own personal style of teaching to accommodate the adult student.

Your comments and suggestions about this manual and about your teaching experiences are most welcome!

J.N.T.

A Note to Administrators

This manual was designed to assist new instructors of adult students, especially those described as "hard to serve" adults. Most likely, these instructors are already competent and experienced within their current areas of teaching. **Branching out to encompass a new population, however, can be unsettling, even threatening. The result could be resistance rather than cooperation, unless staff is well-prepared to:**

- Identify and understand the needs of adult learners.
- Adapt their teaching skills so that they become comfortable working with adult students.
- Recognize areas where they need assistance and/or staff development.
- Promote institution-wide involvement and support for services to adult students.
- Develop a forum for discussion of the difficulties involved with serving this population.

After reading this manual, instructors will be aware of some of the major issues involved in teaching adult students. They will then need help in assessing the kind of assistance they need to become comfortable and effective in their new task.

The New York State Occupational Education Equity Center offers support for agencies as they begin to work with re-entry adult students. Through a combination of technical assistance, staff development, resource material, and referrals, Center staff can facilitate the process of incorporating a new group of students into your agency. For more information about available services, contact:

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Opening Your Classroom to the Adult Student

During your tenure as a high school teacher, you have become proficient, confident, and comfortable in the classroom. You "know" your students, and they seem to respond to your style of teaching. Discipline may be an ongoing concern, but over the years you have managed to develop rapport with high school students. Although each day may bring situations which serve to challenge you--academically, socially, or in matters of discipline-- you can usually rise to the occasion.

BUT NOW...You are being asked to incorporate a new, diverse population into your secondary classroom: adult re-entry students. These students will range in age between 19 and 45 or even older; many of them will be women with young children. Many will have needs very different from their adolescent classmates. Some may have poor academic skills; others may be able to move very quickly through most of the curriculum. Some may be entering a career field nontraditional for their gender. And you face the unique challenge of adapting your classroom to make all this work.

Secondary teachers throughout New York State are finding themselves in similar situations. As a result of the JOBS (Job Opportunity and Basic Skills) legislation, adults will now be encouraged and, in some cases, mandated to receive basic skills and occupational training. Many of these adults will be enrolled in Adult Basic Education programs in high schools, BOCES, and community-based organizations. Not all of them will attend the adult and continuing education programs currently operating. Many will be enrolled during the daytime in traditional occupational programs.

Reading this manual is Step I in the process of becoming comfortable and effective in working with adult re-entry students. It will help you understand the major issues involved in teaching adults and identify ways to adapt your own teaching style to respond to their needs. Steps II and III may include using the resources recommended at the back of this manual and participating in inservice training.

"I have come to a frightening conclusion that I am the decisive element in the classroom. It is my personal approach that creates the climate. It is my daily mood that makes the weather. As a teacher, I possess tremendous power to make a child's (student's) life miserable or joyous. I can be a tool of torture or an instrument of inspiration. I can humiliate or humor, hurt or heal. In all situations, it is my response that decides whether a crisis will be escalated or de-escalated, and a child (student) humanized or de-humanized."

Dr. Hiam Ginott
Between Teacher and Child

Who Will These New Adult Students Be?

High School Dropouts	• One of every four students who enroll in ninth grade drops out of school before graduation. (One in two minority students drops out; one in five white students drops out.) • One in seven of these high school dropouts earns a GED. • 60% of all adults receiving Aid to Families with Dependent Children have not completed high school.
Female Single Heads of Households	• In 1986, 42% of black families, 23% of Hispanic families and 13% of white families were headed by women. • 48% of single parents have less than high school education. (40% have less than eighth grade.)
Displaced Homemakers	• 56% of displaced homemakers have less than high school education. (35% have less than eighth grade.)
Dislocated Workers	• Between 1979 and 1985, there was a net loss of 1.7 million manufacturing jobs in the United States. These jobs had traditionally been a source of relatively high wages for people with little education. • Of the 25 million new jobs which will be created by the year 2000, all but 1/2 million will require more than the most basic level of skills. Most new jobs will be created by small businesses where employers are less likely to provide training because of limited resources.
Individuals with Poor Literacy Skills	• Among 21-to-25-year-olds, approximately 60% of whites, 40% of Hispanics and 25% of blacks could locate information in a news article or almanac. • The average AFDC mother between the ages of 17 and 21 reads below the sixth grade reading level.
	These national statistics speak clearly about the groups of adults who are currently in need of vocational education. Now let's take a closer look at some individual adults who are ready to join a secondary classroom:

Meet Some of Your New Students

Chris R.

- Age 22, single, enrolled in electrical trades program and GED
- Former drug user, served time in county jail
- Behavior problem in class
- Model client in rehabilitation/work program

Patty W.

- Age 19, single parent of four-year-old
- Attendance problems due to transportation and child's health
- High school dropout
- Desires GED and high-paying job, perhaps in computers

Lenore S.

- Age 47, married, five children, three grandchildren
- Factory worker since age 16, no high school diploma
- Factory closed, needs new trade
- Interested in GED and electronic information processing
- Anxious about learning new skills

Sam T.

- 36-year-old machinist unemployed when company relocated
- Accustomed to earning $25/hour
- Skilled jobs currently available in community require retraining and pay only $12/hour
- Unwilling to relocate because of family commitments

Ralph C.

- Age 40, father of four, recently separated
- Successful, trained mechanic
- Lost job due to back injury, resulting in depression and alcohol abuse
- Must be retrained to be employable
- Middle class lifestyle and values

Risa M.

- Age 30, three children, recently single
- Hispanic family, limited English
- Bright and enterprising, suffers from socio-economic limitations
- Fearful of failure
- High tech job appeals to her

Unique Needs, Unique Assets

Once you become comfortable working with adult students, something wonderful can happen in your classroom.

It is easy to understand why many re-entry adult students are described as "hard to serve." Their unique needs often require unique support services to make academic success possible. If your agency is seriously preparing to serve adult students, it is probably working to set up a system of direct support services and/or a referral network of community agencies to address the barriers they face.

To provide the proper environment for adult students, your agency will need the involvement of faculty, counseling staff, and administrators. As a classroom teacher of these adult students, you will not be providing support services as such. But it will be important for you to be able to identify barriers which need to be addressed and to understand how to adapt your teaching methods to appeal to adult learning styles. This may require a little extra effort at first, but the rewards are significant.

Once you become comfortable working with adult students, something wonderful can happen in your classroom:

- The adult students find that they can succeed.
- Your classroom as a whole gets a breath of fresh life as adult students and secondary students learn to work together.
- You will find great satisfaction in sharing in the adults' success.

In many instances, the teacher of adult students must also serve as a facilitator and an advocate. Even when a superb support system and counseling service is available, it is often the teacher who is first aware of individual problems. Teachers should be prepared for this, and know where and how to seek assistance for the students. There will be times when a simple referral is not sufficient. Your active encouragement or advocacy will be necessary to arrange needed services from your agency's counseling service, the local social services department, etc.

Which Support Services Are Needed?

According to Maslow, people must feel secure before they can relax and learn. Adult students are certainly no exception to this rule. They need the support of staff who are aware of the following special needs of adult students:

ACCESSIBLE, AFFORDABLE CHILD CARE

PUBLIC TRANSPORTATION ASSISTANCE AND/OR PARKING AREA

EXTENDED HOURS FOR LIBRARY, DAY CARE CENTER, ETC.

LUNCHES AND SNACKS FOR MATURE TASTES

EXCUSED ABSENCES FOR CHILDREN'S HEALTH APPOINTMENTS, SCHOOL MEETINGS, DEPARTMENT OF SOCIAL SERVICES COMMITMENTS, ETC.

DESIGNATED AREA TO MEET AND STUDY WITH PEERS

APPROPRIATE RULES FOR MATURE INDIVIDUALS REGARDING DRESS CODES, HALL PASSES, ETC.

ACCESS TO A LEARNING RESOURCE CENTER FOR ADULTS WITH LEARNING DISABILITIES

Patti has lost her child care situation. The Department of Social Services told her that it would take about four weeks to secure another placement for her son. What emergency service could an institution provide? What could an instructor do to ease the situation?

Is Your Institution Ready To Work With Adult Students?

Just how ready are you and your institution to incorporate this new adult population? To find out, answer the questions on the following institutional needs assessment, then look over the results. Your "yes" answers indicate the areas in which your institution is well prepared. The "no" answers pinpoint interventions which will be necessary to work successfully with adult students.

You can use the list of contact persons in making referrals for those students who may need support services. If you do not know who is responsible for any of the services listed, discuss this with your administrator, along with any questions you have about your own or your institution's readiness to serve adult students.

Academics/Counseling for Adult Students	Y	N	Planned	Person Responsible
Are the following provided?				
• Vocational counseling services				
• On-site vocational training				
• Referrals for personal counseling?				
• Client referrals for vocational training?				
• Individual plans of study for each student?				
• Adult Basic Education courses?				
• GED preparation or testing?				
• Tutoring or other remedial services				
• Comprehensive resource room services?				
• Identified contact person or counselor?				
• Inservice training to instructors and staff?				

Y=Yes/N=No/P=Planned

Support Services for Adult Students	Y	N	P	Person Responsible
Are the following available?				
• On-site child care?				
• Referrals for quality day care services?				
• Financial counseling?				
• Referral services for family problems?				
• Transportation or stipends?				
• Support groups or special activities?				
• Appropriate revisions of student behavior policies?				
• Appropriate role models?				
Work Readiness for Adult Students				
Are the following provided?				
• Coursework/counseling in time management skills?				
• Coursework/counseling in problem solving strategies?				
• Instruction in resume preparation				
• A course in job search skills?				
• Opportunities for job shadowing and/or work-site visits?				
Job Placement for Adult Students				
Does your agency?				
• Offer a job placement service or job club?				
• Employ a job developer?				
• Maintain an up-to-date job bank?				
• Sponsor on-the-job training slots or internships?				
• Provide follow-up services for up to 6 mos. after placement?				
• Provide follow-up services for more than 6 mos. after placement? (How long _____?)				
• Recruit employers sensitive to nontraditional clients?				
• Offer workplace literacy services to local employers?				

Teen & Adult Students: What's the Difference?

If you have been working at the high school level, you have learned a lot about the attributes of teenage students. You have observed that most traditional high school students see themselves as somewhat dependent upon adults for their physical and, sometimes, psychological needs. Adolescents frequently believe that their job is to regurgitate whatever they have been told to learn. They are often undiscriminating about new information. This style of learning can be explained by their academic experience and biological development thus far, by their expectations about the future, and by the external motivator of grades.

Adult students are more likely to concentrate on whatever they perceive as supportive to their own goals and beliefs.

Since adults have a much broader experience base and are generally dependent upon themselves for their life management, they tend to be more self-directed. They are capable of learning, but frequently do so at a slightly different rate. They are more likely to concentrate on whatever they perceive as supportive to their own goals and beliefs. They tend to be internally motivated and, therefore, more likely to reject new information which is contradictory to their beliefs. Their readiness to learn is clearly linked to their needs as worker, spouse, or self.

In "selling" your class to adults, remember to appeal to them as adults. As a group, they are more likely to accept responsibility and be future-directed. They may show more initiative, welcoming opportunities for advancement. They often prove to be creative problem solvers.

We know that many adults will be attending ABE, GED, and vocational classes because of the JOBS legislation. Like adult students voluntarily returning to school, these individuals are actually consumers of education programs. They are accustomed to purchasing what they need or want - everything from clothing and food to stereos and cars. And a variety of emotional and rational buying motives combine to influence their purchases.

Why An Adult Student Might Choose An Educational Program

Emotional Motives

- Self- esteem and self-fulfillment
- Social approval
- Freedom from anxiety
- Good sales rep or student recruiter

Rational Motives

- Wide selection of choices in educational offerings
- High quality, reasonable price
- Availability of support services
- Increased earning power

Since adults tend to relate new ideas to their ever-growing experience base, try to structure or create learning experiences which will:

- Create positive attitudes in the learner toward the instructor and toward one's self as learner.
- Relate the instruction to the learner's needs.
- Stimulate the learner's attention, awareness, interest, and involvement.
- Encourage and build upon learner enthusiasm.
- Support the learner's progress toward self-chosen goals.
- Reinforce learner participation, self confidence, and achievement.

*Source: John A. Henschke, **"Training Teachers of Adults"**

"I've always been scared to death of computers. But I'm pretty good at fixing things, and my friend makes a really good salary repairing computers. So I'm going to try this training program. I hope I can do it."

Lenore

Considerations For Developing Effective Teaching Methods

Effective teaching methods for working with adult students are, for the most part, simply good teaching methods.

APPEAL TO A VARIETY OF PERCEPTUAL LEARNING STYLES

VARY METHODS OF PRESENTATION

HELP STUDENTS DEVELOP GOOD LISTENING SKILLS

DEVELOP GOOD QUESTIONING STRATEGIES

BUILD STUDENT SKILLS AND CONFIDENCE IN MATH

COMMUNICATE HIGH EXPECTATIONS TO ALL STUDENTS, REGARDLESS OF GENDER, RACE, AGE, OR DISABILITY

PROVIDE OPPORTUNITIES FOR REMEDIATION

ENCOURAGE STUDENTS WHO HAVE POOR SKILLS

USE PRAISE CAREFULLY TO REINFORCE LEARNING AND TO BUILD SELF-ESTEEM

HELP STUDENTS DEVELOP CONSTRUCTIVE INTERPERSONAL DYNAMICS WITHIN THE CLASS

CREATE A CONSTRUCTIVE ENVIRONMENT THROUGH CLASSROOM MANAGEMENT ROUTINES

Perceptual Learning Styles

Every student has a preferred learning style--one which lets the student understand and process information with the most ease. Adult students are especially committed to hearing and processing information in a particular way because their learning styles have developed over a period of many years. In teaching, you try to appeal to as many of these styles in your lessons as possible, in order to reach as many learners as possible.

Perceptual Style	Characteristics	Effective Learning Experiences
Visual	Needs to have a picture in mind "Sees" what others are saying Creates visual images while thinking	Motion Pictures Television Slides Graphs, tables, charts Photographs
Aural	Remembers and repeats ideas that were verbally presented "Hears" what others are saying	Lecture Audiotapes Records Recitations
Interactive	Uses other people as a sounding board	Group discussion Panel discussion Question/answer sessions Interviews
Print	Easily remembers what is read	Reading Written reports Writing
Kinesthetic	Learns better when able to move about Likes to move hands to help with concentration (knit, doodle)	Role playing Body movements Physical activities Physical games
Haptic	Needs to touch what is being learned "Hands on" is very important	Project construction Drawing, painting, etc. Model building Touching
Olfactory	Smells are of special significance Smells trigger specific past memories Easily identifies smells	Odor discrimination Tasting

Vary Your Methods of Presentation

Variety is effective in any classroom, but is necessary for adult students who have been away from the role of student for some time.

Varying methods of presentation in the classroom will ensure that a teacher appeals to many different learning styles during the course of a day. It also helps maintain student interest and teacher energy level. Most teachers employ some combination of lecture, discussion, demonstration, and cooperative learning experiences. Variety is effective in any classroom, but is necessary for adult students who have been away from the role of student for some time.

Lecture

Lecture tends to be an overused method of presentation in most classrooms. In some cases, however, lecture may be the only way to present information. Effective lectures will be brief and well-developed. Some speakers advocate no more than ten minutes of lecture, followed with some type of class participation, to help keep attention focused. **In preparing a lecture, keep in mind the following guidelines*:**

1. **Say a lot about a little**. Narrow the topic down to a few important points which need to be learned. Review the main points, illustrate and use examples, elaborate, reinforce, relate to familiar material, draw implications for practice, summarize.

2. **Use a lot of examples**. Examples relevant to the learner's life experience always make the material easier to remember and to use. The time you spend on learning enough about your students to be able to create meaningful examples will be time well spent in the long run.

3. **Keep moving**. Physically, you need to keep moving to engage the entire group of listeners. When you do not move, only those students nearest to you benefit from your physical presence.

4. **Capitalize on variety**. Variety helps hold the attention of the audience. Change your level of intonation and rate of speaking. Use different visuals: slides, board, overheads.

SOURCE: Shirley J. Farrah, **Adult Learning Methods**.

Discussion

Adult educators favor this method because it is inclusionary and participatory, and places the teacher on equal footing with the learners. Discussions should be used selectively, however, because not every situation lends itself to this approach.

As teacher, you become the discussion leader or facilitator. The facilitator emphasizes the connections, appears to stay behind the scenes, respects all input, and sets rules for participation. Most important, the facilitator establishes a receptive climate so that ideas will be expressed readily and more learning can take place.

Risa seldom contributes to class discussion, even though she has a lot to say in her written assignments. Her instructor cannot tell whether she is self-conscious about her English language skills or whether she is simply shy. How might he discuss this matter with her without embarassing her? How could class discussions be structured to encourage participation by all?

Demonstration

A demonstration is an excellent way to present difficult material because it requires students to use more than one of their senses. A simulation is even more effective because it gives students an opportunity to participate physically in and to experience the concept being taught. Examples of simulation include such activities as role play or workplace modeling. Here the learners are involved cognitively and emotionally.

Consider using simulation when your learning objective includes one or more of the following:

- Developing complex cognitive skills (evaluation, synthesis)
- Impacting positively on learners beliefs and values
- Sharpening human resource skills (communication, problem solving)
- Developing a positive attitude.

SOURCE: Jerry W. Gilley, **Adult Learning Methods**.

Cooperative Learning

Good teaching includes a balance of individual, competitive, and cooperative learning goals for students. A number of educators today are recommending more cooperative learning experiences as a way to engage hard-to-serve students.

In cooperative group learning, students work together to accomplish shared goals. Assigned to small groups, the students are instructed to make sure that every member of the group learns the material presented. Students discuss material with each other, help one another understand it, and encourage each other to work hard. Individual students, as well as the group, can be evaluated effectively, because each group member has a specific role within the group.

This popular classroom management technique is based on over 90 years of research on how students best interact and learn. The research has consistently shown that cooperative learning is very effective because it raises achievement, creates higher self esteem, and results in peer respect. The individual student and the group are equally accountable for the product and process.

How Do You Create A Cooperative Style In Your Classroom?

1. **Arrange the room.** Students need to be working and sitting in groups to communicate.

2. **Assign the groups and roles.** Give each student a role: reader, recorder, "praiser," checker, etc. Students will contribute best when they understand teacher expectations and their assigned roles.

3. **Explain the task.** Teach any material necessary to handle the task. Make certain the group directions are clear. Explain procedures fully, providing opportunity for questions.

4. **Structure positive interdependence.** Students must feel they need each other to be successful in a task. Structure mutual goals with joint rewards. Students must then help each other learn and be responsible for and to the group.

5. **Structure individual accountability.** Each student must feel responsible for learning the material and helping the group. To encourage this, give oral quizzes to random members of a group; use individual test scores added to the average group score; or award a bonus of 10 points to any group where no member scores below 80%.

6. **Structure intergroup cooperation.** Have groups check with and help other groups. Reward the entire class when all members do well.

What Teachers Say About Cooperative Learning

"Doing group work, as well as lecture and seat work, promotes equity because this appeals to many different learning styles."

"Students get a taste of success. Groups do solve their problems, often problems much more complex than individuals in the group could solve."

"Weak students may find themselves being effective and contributing group members, and strong students may discover they need to develop new skills to be effective in a group situation."

"Learning to work together is important in itself. Cooperative experiences will benefit students in future work and family situations."

"As groups learn to function without a lot of teacher intervention, students become autonomous learners, independent of the teacher and free of pat answers."

"Small groups provide a safe place for low achievers to try out their ideas."

SOURCE: Timothy Erickson, **Get It Together.**

A Caution About Cooperative Learning

Researcher Robert Slavin is a firm supporter of cooperative learning...when it is used correctly. He cautions against the dangers of treating cooperative learning as a fad, however, because it is being promoted as a solution to so many educational and social problems. If the concept is oversold and undertrained, many teachers are likely to experience failure and frustration. Teachers interested in pursuing cooperative learning techniques are encouraged to investigate some of the many resources and training opportunities now available.
(See resource listing in the back of this manual for resources which can be borrowed from the ***Equity Center.****)*

"Application of cooperative learning guidelines provides an excellent vehicle for helping adults who suffer from math anxiety. When two to four students are jointly responsible for solving a problem or completing an assignment, no one person is in the spotlight, and it becomes 'all right' to make mistakes and to ask questions. There is less pressure to find one right way or one correct answer, and it is much more likely that different approaches will be proposed and explored--paying off in a much richer understanding of the topic."

Janet R. Handler
Adult Learning

Listening Skills

According to researchers, most people will remember:

10% of what they read

20% of what they hear

30% of what they see

50% of what they hear and see

70% of what they see and write

90% of what they hear and do

Regardless of the individual perceptual styles of your adult students, as teachers you do a lot of talking which requires students to **LISTEN**. Taking time out to help students develop good listening skills will make class more valuable for both student and teacher.

The human mind can process words, or listen, faster than the voice can speak. A good listener is one who has learned how to use the mind's "extra time" to benefit the listening process. Instead of day dreaming, dwelling on problems, etc., during a lecture, a good listener will be thinking of questions and analyzing what is being said.

Tips to Share with Your Students To Improve Their Listening Skills

- Jot down notes about the lecture.
- Ask internal questions to be answered later.
- Try to integrate new information with prior knowledge.
- Summarize what has been said.
- When you do not understand, say so.
- Be affected by **WHAT** is being said, not by **WHO** is saying it.

Good Questioning

Many re-entry adults have been away from the give-and-take atmosphere of the average classroom for a long time. Their adjustment to the role of student may be easier if their instructors make a special effort to formulate questions carefully and ask them in an engaging manner.

A question is worded well if it:

- Is concise
- Needs little or no clarification
- Encourages students to process information prior to answering
- Requires students to evaluate new information or concepts as they relate to prior experiences.

A well-worded question is likely to be most effective when the instructor uses the following questioning strategy:*

1. Ask the question, then PAUSE for about five seconds.
2. Ask the question ONE TIME. (You may also choose to write the question on a flip chart, chalk board, etc., for reinforcement.)
3. Discourage immediate answers; allow time for all students to process a question before accepting answers.
4. Never have just one correct answer in mind. (If your question has only one correct answer, it may not be a good question.)
5. Acknowledge every answer by repeating it VERBATIM.

*Source: Raymond F. Crapo, **Training and Development Journal.**

Example Of A Good Question

"Consider the safety factors in the lab. Which is the most important safety factor, and why?...Shirley, please answer".

This is a good question because it is clear, concise, encourages thinking, and invites all students to participate before one student is selected by name to answer.

Example Of A Poor Question

"Jennifer, is wearing safety goggles the most important safety concern?"

This is a poor question because it is not clear, requires no analysis by the student, and invites only Jennifer to think about an answer.

Math Skills and the Adult Learner*

Traditional mathematics programs are based almost entirely on the individual's ability to solve mathematical problems independently. While this approach may have some benefits in the early mastery of number concepts, the isolation and competition more than likely help foster unnecessary anxiety and avoidance in many learners. In contrast, the opportunity for adult learners to find support and assistance from classmates through social interaction has been shown to be an extremely effective aid to learning.

A student's skill and comfort level in mathematics can have a profound effect on personal decision making; career selection and advancement; and the ability to respond to changing workplace requirements. Unfortunately, mathematics is an academic area that causes considerable anxiety for many adult learners and re-entry students.

You are probably aware of some of the research on the limiting effects which this "math anxiety," and its close relative "math avoidance" have on career options, particularly for women and minorities. Mathematics has been described as a "critical filter" because limited math skills clearly "filter out" many of the career options available to an individual. The reality of our current and future workplace requires mathematical literacy for all workers. **We must forget about the negative image of mathematics as a filter, and begin to view mathematics positively, as a pump which will move all students toward new career options and opportunities.**

As a teacher of adult students, you can create a learning environment that supports the learner in gaining the self-confidence and competence necessary to be a mathematically literate worker. **You will be able to assist the learner in becoming:**

- More aware of the need for mathematics
- More successful in using math skills
- More effective as a problem solver, both individually and cooperatively
- More qualified for higher paying career options

*** You will find that this is a significant topic for your consideration whether you are a mathematics teacher, or whether you simply teach a class which requires application of math skills.**

The Mathematics Learning Environment

There is probably no more important area to consider in working to develop mathematical literacy in adults (or any students) than the environment within which the learning takes place. The learning environment can be thought of as a framework providing support and nurturing for the development of mathematical literacy.

Jean Kerr Stenmark* suggests the following criteria for creating an equitable mathematics environment:

- Students constantly use the language of mathematics, talking to each other in groups, writing in journals, explaining their work, and exploring new ideas.

- When a student does not understand a concept or process, an alternative is suggested. Many possible strategies can be applied to solving any problem, simple or complex.

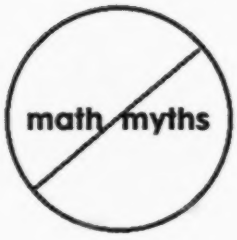
- Student learning is assessed in many ways--by teacher observation, beginning and ending samples of work, mathematics journals, mathematics projects, interviews, student self-assessment, etc.

- A tone of encouragement and excitement eases frustration.

- Students are not judged competent or incompetent at mathematics or any mathematics-related subject because of their looks, last name, age, birthplace or neighborhood, or the group to which they belong.

SOURCE: Jean Kerr Stenmark, ***Arithmetic Teacher***.

Patti's instructor is pleased with her progress, but has noticed that she seems anxious whenever she has to use a calculator. Consider ways to make her more comfortable and efficient in performing calculations.



Lenore says that she has been away from school so long that she finds the math section of her program almost impossible. Besides, she says, "women never do very well at math." She is getting so discouraged that she considers dropping out of the program. How would you respond?

Dispelling the Myths of Math

Traditional mathematics classrooms have been guilty of perpetuating many myths about the who, how, and why of mathematics. For example, do you ever hear students make the following kinds of statements?

"But it's not a good idea to count on your fingers!"

"I always get the right answer, but I don't know how I got it."

"I subtracted wrong in the last step. Now all the time I spent on that algebra problem is wasted!"

"There's no sense trying to be as good as Bob. Men are better at math than women."

Of course, none of these "myths" is true, but they are widespread. Examining them with students can help to challenge many of our traditional beliefs about the nature of mathematics. We need to help our students recognize how such notions can impede individual efforts at becoming mathematically literate.

Mathematical Problem Solving

The essence of "doing" mathematics lies in the process of problem solving, or understanding a problem and then systematically searching for its solution. Many re-entry students may never have had a successful experience in problem-solving. All too often the overemphasis on "drill and practice" in the traditional mathematics classroom leaves very little time for involving students in real-world applications of mathematical problem solving.

The confidence and motivation so essential to becoming mathematically literate is primarily gained through repeated opportunities to experience and solve "real-life", relevant problems in the classroom. Problem-solving skills are best developed through **active classroom experiences**, particularly those conducted in a cooperative learning situation.

Teacher Expectations

Research consistently tells us that students perform only as well as we expect them to perform. We need to become aware that we all suffer from unconscious stereotypes which affect our expectations for particular groups of students. **Such stereotypes commonly include:**

o Women and girls are poor mathematicians.

o Most people on welfare are lazy and enjoy being "on the dole."

o Women cannot succeed in "men's" trades.

o A young teacher cannot be effective with older students.

o Learning disabled students usually have emotional difficulties as well.

o A woman cannot be a good student and a good mother.

Regardless of whether or not you like everyone in your classes, it is essential to communicate that you have high expectations for all students–and to encourage them to have high expectations for themselves. You can do this by employing a number of conscious strategies:

o Make an effort to call on all students. (Keep a chart to help you call on students from different parts of the class systematically.)

o Don't wait for students to "ask" for help. (Some who need it most won't seek it.)

o Allow wait time for answers. (Five seconds is sufficient.)

o Delve for answers when a student is having difficulty with a question (probe, give clues..)

o Give low achievers an opportunity to answer all questions, including higher level questions.

o Ask the question ... wait ... call on a student to respond. (This way all students are invited to process a question)

o Make eye contact with the student who is speaking.

o Offer positive reactions to all answers.

o Show an interest in each student's progress.

Risa, a young woman from a traditional Hispanic family, has been counseled to enter the cosmetology program, even though it does not match her interests or her need to earn enough to support herself and her child. The counselor feels that this would be a culturally safe career for her. Consider what a teacher should do when Risa shows real potential for success in a higher-paying technical field.

Remediation

Remediation should be presented in a positive light, recognizing and building on whatever skills the student already possesses.

Many adult students are in need of further development in certain skills, either because they have been away from a formal education setting for a long time, or because they had never experienced much academic success in the first place.

Whatever the cause, it is imperative to provide a variety of both formal and informal remediation. The best method is to establish a remediation program which students can take prior to, or in conjunction with, their skills training. This might include taking an adult basic education or a high school equivalency program at the same time as the student is enrolled in a technical or vocational program. Whatever the structure, the remediation should should be presented in a positive light, recognizing and building on whatever skills the student already possesses .

It is important for the remedial instructor to be familiar with specific requirements for various training programs. For example, it is important to know whether specific training programs require an in-depth knowledge, or merely a basic knowledge of fractions, decimals, word problems, calculator, protractor, micrometer, technical vocabulary, essay writing, report format, resumes, and computer literacy.

Learning Disabilities

Adults, like other students, commonly suffer from undiagnosed learning disabilities. In fact, this may be the reason they have not pursued further education.

You should consider the possibility that a student might have a learning disability if you notice the following signs:

- Very low self esteem
- Refusal to hand in written assignments
- Extreme nervousness regarding testing
- Appearance of "being out of it" much of the time
- Unwarranted poor performance on tests
- Numerical reversals
- Good verbal presentation, but incoherent written presentation
- Inability to learn from oral presentation

On some days, Chris is an enthusiastic and well-informed participant in class. On other days, particularly when there are assignments due or tests scheduled, he becomes sullen and withdrawn. How could an instructor explore this problem?

Remember that a learning disability is a handicapping condition, not a sign of limited intelligence. In all likelihood, the adult has already developed methods to mask the disability and to compensate for it. However, the teacher involved should consider developing alternative means of processing information and strategies for supporting the student's efforts to succeed, for example:

- Drop the lowest test score to increase chances for success.
- Allow the use of a tape recorder in class for note taking.
- Allow oral or taped presentations rather than written assignments.
- Introduce the student to the Learning Resource Center for homework assistance and a stress-free testing environment.

Encouraging Students With Poor Skills

Until recently, Ralph saw himself as a successful person. Because of recent personal setbacks, however, he can't seem to handle getting a low grade on even a minor assignment. Ralph's instructor is sensitive to this situation, but is not sure of the best way to respond. What advice could you offer her?

Adult re-entry students, and all other students for that matter, need encouragement in work that is difficult for them. The following classroom policies can promote success and build self-esteem in students:

Give partial credit for late and/or incomplete work. Encourage making up work rather than punishing for having missed it.

Correct work in pencil. Offer students a chance to redo their work for a higher grade. Grades on redone work should not be averaged with first draft grades.

Create a forgiveness policy which does not count old negative grades or behavior if a student shows a definite trend toward improvement.

Help students break down assignments into smaller segments which seem possible to complete.

Give lots of help monitoring big assignments. Divide work into several modules, with check points where you can assess progress and encourage students who are having difficulty.

Assign each student an "absence partner." (Ideally, partners should be students who do not know each other well at the beginning of the year). Students are responsible for collecting all handouts and assignments whenever their partners are absent, and calling or visiting them to review work they have missed.

Develop a system of grading in which there is "trend" information: Are scores rising or falling? Make current success weigh much more than old failures. No straight averaging of grades is allowed.

SOURCE: Hanoch McCarty, **Self-Esteem: The Bottom Line in School Success**

Effective Praise

Just as every student should have an opportunity to respond to questions in class, every student should receive appropriate feedback to the response made. Correct answers require affirmation, as do thoughtful questions and efficient work. **Effective praise can be the essential ingredient for adult student success because it helps build the self-confidence to persevere.**

Even the least proficient student should have an area which can be affirmed or praised. For example, perhaps a student is weak in the technical/grammatical aspects of writing, but has a good sense of order and creativity. **Correct or effective features can be emphasized at the same time that problem areas are being corrected:**

"Jane, you have a nice sense of order and organization in your writing. This is very effective because writing is a form of logical communication. Let's spend some time improving your grammar and spelling skills so they won't detract from what you have to say."

Effective praise or affirmation can take many forms: "interesting view", "good idea", "nice job", "now you're catching on", as well as the nonverbal forms: a smile, thumbs up, handshake, pat on the back, nodding of the head, etc.

It is important that praise be specific and sincere, or it loses its magnificent power of creating self-esteem securing status among peers, and even averting "discipline" problems.

Ralph's instructor in the job skills/resume writing class is an attractive single woman. She has been giving Ralph a great deal of praise for his efforts in an attempt to re-build his sense of self-worth. Lately, Ralph seems to misunderstand this attention, responding as if she were "making a play" for him. The instructor now realizes that her praise of Ralph should have been tied much more closely to specific aspects of his assignments. Consider how she might phrase supportive comments about Ralph's work.

Interpersonal Dynamics in the Classroom

Ideally, teen and adult students will interact in a positive manner, modeling enthusiasm and maturity for each other. Many difficulties may need to be worked out however, before this ideal situation becomes a reality in any given classroom.

Whenever diverse groups of people come together, conflict is natural and inevitable. For instance in the classroom, some younger students may feel that re-entry students receive too many special considerations, such as parking privileges, a designated lounge area, exemptions from parts of the curriculum. On the other hand, some older students may believe that younger students are taking their education for granted; that they "have it easy" because they have no family responsibilities; and that they are unappreciative of the teacher's efforts. Students of any age may feel that the instructor has unreasonable expectations of the class.

This kind of conflict could become a constructive learning experience. But if issues are unresolved and the teacher focuses only on trying to control behavior, results can be alienation, loss of self-esteem, and inability to work .

As the teacher, you have three choices for response to classroom conflicts:

1) Ignore the conflicts, **OR**

2) Make use of the established code of discipline within the school to address the conflicts, **OR**

3) Employ the principles of conflict management to improve interpersonal dynamics among students and between student and teacher.

Giving students many opportunities to share ideas, work together, and listen to each others' "stories" will facilitate development of a learning community, thereby reducing the need for conflict management.

Using conflict management principles with adult students–or with any students, for that matter–has certain advantages: Conflict management gives less mature individuals a model for dealing with difficulties and accepting responsibilities. Students of any age will benefit from learning to understand and respect the opinion of others; discuss problems rationally; and find compromises which protect everyone's rights. This approach also minimizes the awkwardness you may feel in "disciplining" an adult or making a mature person comply with trite institutional punishments.

There is much written on various approaches to conflict management. It is important for individuals to identify their own styles and review the appropriateness of their responses in a variety of situations. This is best done as part of a conflict management training program. Until you have an opportunity for training, through the **Equity Center** or elsewhere, you can work with the resources listed at the end of this manual.

Creating A Constructive Environment

Keeping your classroom running smoothly requires a predictable routine, high expectations, and rules which everyone understands. Take the time at the beginning of the year to "set the stage" for what you expect from all students--whether teenagers or adults. As students join the class during the year, be sure to provide an orientation to classroom procedures. Each new student can be paired up with a student mentor, someone seasoned in the class routine. This small investment of time and energy at the beginning will give a high yield as your class moves through the school year smoothly and efficiently.

Take time at the beginning of the year to "set the stage" for what you expect from all students--whether teenagers or adults.

Rules of the Road: Getting off to a Good Start

1. **Be up front about the rules.** How important is being prompt? Must students remain in class until the bell?

2. **Establish a routine.** Begin each class with a review. Write all assignments on the board.

3. **Greet students at the door.**

4. **Introduce yourself and model good self-esteem.**

5. **Be ready to teach.** Prevent "dead time." Have plans organized and comprehensive. Have additional activities in case of early completion or need for remedial practice.

6. **End each class on a positive note.** Let students feel successful. Let students look forward to the next class.

7. **Show all students you have high expectations for them,** regardless of gender, race, age, or disability.

8. **Make classroom/lab inviting.**

9. **Let adults students know they are responsible for their actions.** Students are responsible for their own success. Students should feel free to seek help.

10. **Teach students to work independently and cooperatively.**

From Theory to Practice

Take a moment to read about Sam and Risa, two re-entry students who are having difficulties in their role as students. Consider the issues raised in this manual as you think about the questions in the margin next to their stories. Then turn the page to compare your thoughts with the comments which follow.

Sam Thompson

Sam is a 36-year-old former machinist who held a highly skilled job until six months ago, when his employer moved to another region of the country. Although there is no longer a need for machinists in this area, he does not want to relocate because of family commitments.

What kind of services could an institution offer to help a student in Sam's situation?

In September, Sam enrolled at the local vo tech center in hopes of learning a new trade--one which has a good career path, so he can eventually resume his accustomed standard of living. Lately, however, Sam has been rethinking the appropriateness of the retraining because of serious difficulty keeping up with the classwork. Two of his instructors have commented that he would do better on written tests if he could improve his study habits and notetaking skills. One instructor has been devoting considerable time to helping Sam with notetaking, but is becoming frustrated with the minimal progress he is making. Sam is also frustrated because he does not like to take notes; he prefers to listen and then read and commit important information to memory.

What action could an instructor take within the classroom to increase Sam's chances of success?

What kind of inservice training might help an instructor work more effectively with a student like Sam?

See next page for comments about Sam's situation.

There are a number of programs which could help Sam with his writing disability. Appropriate services found in most institutions include:

- Basic tutorial and learning lab services in both writing skills and in content areas
- Career counseling and assessment to determine whether Sam's goals are realistic
- Periodic group sessions on student survival skills, such as listening skills, study skills, time management, etc.

One of the most important ways an instructor could increase Sam's chances of success is through appropriate referrals. Since the teacher is often the first to notice the need for remedial and counseling services, an early referral could make a critical difference. **There are also many classroom strategies to encourage success in a student who is struggling, for example:**

- Opportunities for students to take a test orally when poor writing skills prevent them from expressing how much they have really learned about a topic
- More practice assignments, with opportunity to improve upon a first draft after discussing assignment with instructor
- Permission for students to use a tape recorder when necessary during lectures
- Marking policies which eliminate earlier low grades if recent work shows improvement
- Assigning each student a "study partner" so that they can help each other with difficult assignments.

Sam's instructors would probably choose to take advantage of inservice training in adult learning styles, learning disabilities, and "survival skills" for adult students.

Risa Martinez

A thirty-year-old recently divorced mother of three, Risa is dually enrolled in both GED and robotics training programs. She is bright and enterprising, but is struggling with the mathematics components of the program. She has also reached the limit of allowable absences because her four-year-old has been sick a lot since he has been going to the daycare center.

The instructor in the robotics program says he is pleased to have a female student in his class and is committed to encouraging women to enter high wage technical fields. He has warned Risa, however, that he will not recommend her for a job at the end of the semester if she misses any more classwork.

Privately, he has remarked to you that Risa "is trying to take on more that she can handle....Mothers of preschoolers should really be at home with their children. If they have to work, they could always babysit." He doubts that Risa will be able to get her life in order, despite her ambition and admirable goals.

What kind of services could an institution offer to help a student in Risa's situation?

What action could an instructor take within the classroom to increase Risa's chances of success?

What kind of inservice training might help an instructor work more effectively with students like Risa?

See next page for comments about Risa's situation.

Risa Martinez

A student in Risa's situation needs a number of support services from the institution she attends. She is fortunate that she already has access to a good child care center located near the school. **Other institutional policies/services which would help her include:**

- Remedial mathematics class or tutorial
- Waiver of the school absence policy where instructor, counselor, and administrator agree it is appropriate
- Flexible semester scheduling which allows certain students to be granted an "incomplete" and make up work within a designated period of time
- Support group for adult students to discuss their problems, provide mutual encouragement, and work to gether to solve certain practical problems, such as forming a babysitting cooperative
- Career counseling and assessment to determine whether Risa's goals are realistic.

After making appropriate referrals for Risa, an instructor could further increase her chances for success in a number of ways:

- Assigning a "study partner" to keep Risa informed of class work she misses
- Accepting completed assignments after the deadline if there is a valid reason for the lateness
- Communicating high expectations to each student, even those who have to overcome difficulties to succeed.

Risa's instructor could probably benefit from inservice training in the relationship between teacher expectations and student achievement, working with "hard-to-serve" adult students, and the changing roles in work and family.

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Recommended Resources Available for Loan from

Occupational Education Equity Center

47 Cornell Road
Latham, New York 12110

Telephone 518-786-3211

The ***Oc. Ed. Equity Resource Center*** *contains more than 1,500 print and audio-visual materials on issues related to equity in education. New York State educators are encouraged to borrow these resources free of charge throughout the year.*

Materials may be borrowed in person or by telephone or mail request. Orders are sent out via United Parcel for a three-week loan, which includes shipping time. Borrowers are responsible for UPS return costs.

Adult Learners Resource List

Available for free loan for New York State Educators from the
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47 Cornell Road, Latham, New York 12110-1402
518-786-3211

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47 Cornell Road, Latham, New York 12110-1402
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For Further Information

Professional Organizations

American Association for Adult and Continuing Education
(AAACE)
1112 16th Street, NW
Suite 420
Washington, DC 20036

Research, conferences, and publications **(Adult Learning Magazine).** Individual and organizational memberships available.

New York Association for Continuing and Community Education (NYACCE)
Jerry Zinczyn, Treasurer
Rochester City School District
131 W. Broad Street
Rochester, New York 14614

Annual conference, networking opportunities, and newsletters. Individual and organizational memberships available.

Resources on Mastery Learning

American Association for Vocational Instructional Materials (AAVIM)
120 Driftmier Engineering Center
University of Georgia
Athens, Georgia 30602
404-542-2586

Publishes performance-based teacher education modules. Of particular relevance are **Category C: Instructional Execution and Category K: Implementing Competency-Based Education.** Write for information on availability and cost.

National Center for Research in Vocational Education
Ohio State University
1960 Kenny Road
Columbus, Ohio 43210
800-848-4815

Publishes a variety of resources. Of particular relevance is the 1987 publication **Developing Curriculum in Response to Change** by Judith A. Samuelson, et al.